

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-18 are pending in the present application and stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicants respectfully traverse this rejection.

It is well established that an Examiner must provide a reasonable explanation as to why the scope of protection provided by a claim is not adequately enabled by the disclosure.¹ Applicants respectfully submit that such a burden has not been met in the instant rejection. In addition, Applicants respectfully submit that assertions made in the outstanding Office Action are incorrect and have disregarded Applicants' previously submitted arguments.

The outstanding Office Action states the following:

“There are no numerical data, i.e. radius of curvature of each surface of each lens/mirror, the refractive index of each lens/mirror, the spacings between optical elements, etc., provided for at least a scanning beam focusing mechanism nor a single example to show that the scanning beam focusing mechanisms are configured to satisfy the claimed inequality. What are the values of ΔL and α that are obtained from the scanning beam focusing mechanism? The values of ΔL and α are dependent on the optical property/characteristics and the arrangement of the scanning beam focusing mechanism in the optical scanning apparatus. Without the numerical data provided for the scanning beam focusing mechanisms, how can one make the scanning beam focusing mechanisms which satisfy the claimed inequality without undue experimentation?”

First, Applicants respectfully submit that this explanation for the outstanding rejection is not reasonable. In fact, the statement is incorrect based on the arguments and explanations

¹ “In order to make a rejection, the examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention” MPEP §2164.04, citing *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

previously submitted in the amendment filed on December 23, 2004 as further explained below.

Second, compliance with the enablement requirement of 35 U.S.C. 112, first paragraph, does not turn on whether an example is disclosed.² The standard to determining whether the specification meets the enablement requirement is whether or not undue experimentation is needed to practice the claimed invention.³ In fact, the specification need not contain an example if the invention is otherwise disclosed in such manner that one skilled in the art will be able to practice it without an undue amount of experimentation.⁴ “In other words, lack of working examples or lack of evidence that the claimed invention works as described should never be the sole reason for rejecting the claimed invention on the grounds of lack of enablement.”⁵

Based on accepted patent examining procedure current in vigor, as just summarized, Applicants respectfully submit that there is no need to submit the required numerical data or a working example because one of ordinary skill in the art would be able to make a scanning beam focusing mechanism satisfying the claimed inequality without undue experimentation. In fact, contrary to the incorrect assertion made in the outstanding Office Action,⁶ as explained in the Amendment filed on December 23, 2003, in the instant invention, the parameters ΔL , α and R can be calculated by one skilled in the art without detailed numerical data of optical components such as lenses, mirrors, and so on and without undue experimentation.

² See, for example, MPEP §2164.02.

³ See, for example, MPEP §2164.01, citing *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) and *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

⁴ See, for example, MPEP §2164.01, citing *In re Borkowski*, 422 F.2d 904, 908, 164 USPQ 642, 645 (CCPA 1970).

⁵ See, for example, MPEP §2164.02.

⁶ That “the values of ΔL and α are dependent on the optical property/characteristics and the arrangement of the scanning beam focusing mechanism in the optical scanning apparatus.”

The parameter ΔL represents a positional change of the scanning surface at a center joint portion between the two scanning motions on the scanning surface. When the change is caused due to an eccentric rotation of a cylindrical scanning surface, the parameter ΔL indicates the smallest and largest values of eccentricity. That is, one can obtain the parameter ΔL based on the specification of the eccentricity of the scanning surface without the knowledge of optical data such as a refracting angle, and so on.

The parameter α represents an incident light angle on the scanning surface at the center joint portion, and can be calculated based on a positional change A on the scanning surface and an image height B, i.e., $\tan \alpha = A/B$. The change A and the image height B can be measured with a measuring tool arranged at a position in the vicinity of the center joint portion on the scanning surface.

R is a basic parameter related to the minimal distance between adjacent pixels, for example 1200 dpi.

Therefore, it is clear that one skilled in the art can make the claimed scanning beam focusing mechanism without undue experimentation and without additional information or numerical data of optical components such as lenses, mirrors, and so on.

As described above, each of the parameters ΔL , α , and R can easily be calculated without detailed optical data. Consider as an example and not as a limitation the following exemplary calculations made for an actual Ricoh product, Imagio MF3300W with an A2-size-sheet feature. In Imagio MF3300W, a required resolution is 600 dpi, the maximum value of eccentricity of a photosensitive drum (i.e., the positional change A) is $390 \mu\text{m}$, and the positional change of the latent image of the photosensitive drum in a main scanning direction (i.e., the image height B) is $75 \mu\text{m}$. Based on these exemplary parameters, the calculation of ΔL , α , and R would be as follows:

$$(i) \Delta L = \sqrt{390^2 + 75^2} = 397.15 \mu\text{m};$$

$$(ii) \alpha = \arctan\left(\frac{390}{75}\right) = 1.381 \text{ radians; and}$$

$$(iii) R = \frac{25.4mm(= 1inch)}{600dpi} = 42.33 \mu m.$$

As shown, there is no undue experimentation for one of ordinary skill in the art to make a scanning beam focusing mechanism based on the claimed inequality. In addition, it should be clear that there is no need for numerical data of optical components such as lenses, mirrors, and so on to use the claimed relationship.

Lastly, the determination that "undue experimentation" would have been needed to make and use the claimed invention is not a single, simple factual determination. Rather, it is a conclusion reached by weighing several factual considerations.⁷ Applicants respectfully submit that there is nothing in the outstanding Office Action, or previous Office Actions, that satisfies this patent examining procedural requirement. A factual issue such as this must be supported by "substantial evidence" under the Administrative Procedures Act.⁸ The outstanding Office Action is devoid of any substantial evidence that these factors have been considered in support of a conclusion that one of ordinary skill would be unable to practice Applicants' invention without undue experimentation. Therefore, Applicant requests that such substantial evidence be provided or that the rejection of Claims 1-18 under 35 U.S.C. §112, first paragraph be withdrawn.

⁷ "These factors include, but are not limited to: (A) The breadth of the claims; (B) The nature of the invention; (C) The state of the prior art; (D) The level of one of ordinary skill; (E) The level of predictability in the art; (F) The amount of direction provided by the inventor; (G) The existence of working examples; and (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure."

MPEP §2164.01(a), citing *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

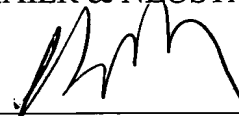
⁸ See, for example, *Dickenson v. Zurko*, 119 S. Ct. 1816, 50 USPQ 2d 1930 (1999); *In re Gartside*, 53 USPQ 2d 1769 (Fed. Cir. 2000).

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Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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